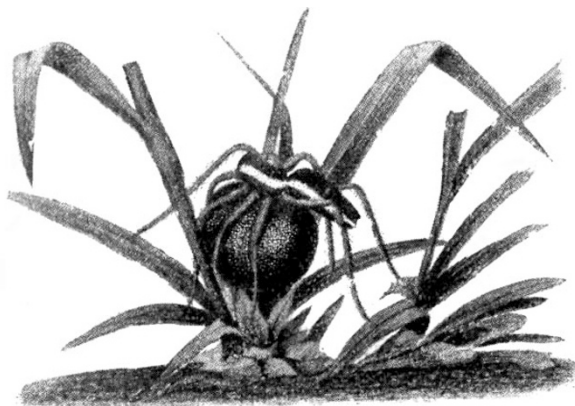


closely his arguments; but that they are worthy of the deepest attention, will be realised by all arachnologists who are acquainted with M. Wagner's previous works.

Perhaps the highest praise that can be bestowed upon this work, is to say that, even when stripped of its theories, it quite reaches the high standard of excellence attained by M. Wagner's previous papers, and that the great value of the theoretical part lies in the fact that



the key to all problems is sought in the hypothesis of evolution by means of Natural Selection.

The memoir is admirably illustrated with ten lithographed plates, of which eight are coloured, and, in addition, with two hundred and fifty-two diagrams in the text. The figure we here select for reproduction, to give an indication of the nature of the rest, represents the female of *Ocyale mirabilis* carrying her cocoon.

R. I. P.

Elementary Practical Chemistry, Inorganic and Organic.

By J. T. Hewitt, M.A., D.Sc., Ph.D., F.C.S., and F. G. Pope. Pp. 42. (London: Whittaker and Co.)

ALTHOUGH the authors of this small book have confined themselves to such parts of elementary qualitative analysis as find a place in Stage I. of the Science and Art Department Syllabus, neither in general plan nor in details of treatment does the book possess any educational advantage over its many competitors. A mere recital of reactions cannot be considered as "Elementary Practical Chemistry." Surely it is possible to present even the array of facts utilised in analysis in such a manner as to comply with the fundamental requirements necessary to be fulfilled by all educational works designed for young students of science. The production of compilations of the present type will probably cease to exist when the new regulations for Organised Science Schools come into force. We may then, perhaps, look for the production of really philosophical text-books arranged on sound educational lines, and yet calculated to minimise the very real difficulties encountered by the beginner. Putting aside these fundamental considerations, it is only just to say that the authors have brought together a strictly limited set of reactions with few positive inaccuracies.

How to Live in Tropical Africa. By J. Murray, M.D. Pp. 252. (London: George Philip and Son, 1895.)

So far as literary merit is concerned, this is a poor book. The text is disjointed, it is too full of unnecessary quotations, and there is too much tautology. But if only the subject-matter is considered, the verdict is that the book is a trustworthy guide to tropical hygiene, and a useful manual on the cause, prevention, and cure of malarial fevers. The importance of such a handy volume to emigrants and visitors to Africa can hardly be overstated. And as the book is the outcome of medical experience, it possesses exceptional value.

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LETTERS TO THE EDITOR.

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The Liquefaction of Gases.

PROF. OLSZEWSKI'S letter in NATURE of January 10 is a more serious matter than a claim for priority. The letter charges Prof. Dewar with allowing the impression to go abroad that he has carried out much original research into the methods of liquefying the more permanent gases, and the properties of the liquids produced; whereas, according to Prof. Olszewski, most of Prof. Dewar's experiments have been merely repetitions of work done by others.

In his brief communication to NATURE (January 10), Prof. Dewar has been too modest either to defend himself or to meet his opponent. Fortunately, he makes one definite statement:—"A reference to the *Proceedings* of the Royal Institution between the years 1878 and 1893 will be sufficient to remove the suggestion that the apparatus I use has been copied from the *Cracovie Bulletin* of 1890."

I have followed Prof. Dewar's recommendation, and made references to the *Proceedings* of the Royal Institution. In his lecture at the Royal Institution on June 13, 1884 (*Proc. R. I.*, xi. 148), Prof. Dewar refers to Messrs. Olszewski and Wroblewski as having "recently made such a splendid success in the production and maintenance of low temperature." He describes and figures an apparatus which is a slightly modified form of that of the Polish professors, which in turn was derived from the apparatus of Cailletet; and he says: "Provided a supply of liquid ethylene can be had, there is no difficulty in repeating all the experiments of the Russian observers." No claim is made here to originality in the essentials of the apparatus, nor in the experiments performed. The apparatus referred to by Prof. Dewar in his lecture of June, 1884, was used by Prof. Olszewski in 1883, and was improved by him in 1884; in 1887 the apparatus was made capable of liquefying oxygen and other gases in considerable quantities at the ordinary atmospheric pressure (see Olszewski, *Phil. Mag.* February 1895, 189-190). In 1890 the apparatus was so improved that from 30 to 100 c.c. of liquid oxygen could be produced by it (see Olszewski, *Phil. Mag.* February 1895, 192-193). Prof. Olszewski states (NATURE, January 10) that a description of this improved apparatus was sent to Prof. Dewar. A year after this, on June 26, 1891, Prof. Dewar delivered a discourse on Faraday's work at the Royal Institution. The published abstract of this lecture (*Proc. R. I.* xiii. 481) contains a photograph of the pumps and engines used in the laboratory of the Royal Institution, and a photograph of the arrangement of the apparatus on the lecture table; but it is impossible to make out the details of the apparatus from these photographs. So far as can be judged from the *Proceedings* of the Royal Institution, Prof. Dewar did not show large quantities of liquid oxygen, nitrogen, or air in his lectures until June 10, 1892, when he placed before his audience a pint of liquid oxygen. Two years before this Prof. Olszewski had obtained 100 c.c. of liquid oxygen, and he tells us in his letter to NATURE (January 10) that 200 c.c. of this liquid were prepared and exhibited by him in July 1891. A pint is undoubtedly more than 200 c.c., but unless one does something with the larger quantity which cannot be done equally well with the smaller, nothing is gained by conducting the manufacture on the large scale.

I can find no other mention of the apparatus used at the Royal Institution for liquefying large quantities of gases. There is indeed no accurate description in the *Proceedings* of that Institution of the apparatus used by Prof. Dewar. If Prof. Dewar has made marked improvements in any essential parts of Prof. Olszewski's apparatus, why has he not published an accurate description of these improvements in some recognised scientific journal?

A reference to the *Proceedings* of the Royal Institution is then sufficient, not to remove, but to strengthen, "the suggestion that the apparatus I [Prof. Dewar] use, has been copied from the *Cracovie Bulletin* of 1890," or at least that it has been borrowed from descriptions of apparatus devised by Prof. Olszewski.